

James R. Thurmond
Scientific and Web Programmer

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Education: Master of Science in Bioinformatics, May 2006
Indiana University, Bloomington, Indiana
GPA: 4.0 on a 4-point scale

50+ hrs of additional graduate credit in mathematics, 1996 – 2000
Western Michigan University, Kalamazoo, Michigan

Master of Arts in Mathematics, August 1993
Southwest Texas State University, San Marcos, Texas

30+ hours of coursework in computer science
UT Austin, WMU, and IU

40+ hrs coursework/graduate credit in biology, 1987 – 1989
University of Texas, Austin, Texas

Bachelor of Arts in Physics, May 1985
University of Texas, Austin, Texas

Work Experience: *Database Programmer* **July 2006 – present**
Responsible for database maintenance, perl and Mason web tool maintenance, and tool development and upgrades on the HIV, hepatitis C, and influenza viral genome sequence databases, at the Los Alamos National Laboratory. Developed bulk input web tool for power database users to add batch sequence data. Merged a set of HCV software tools with a similar set of tools used by the HIV sequence database. Worked in an linux/apache environment, used version-control software (SVN). Participated in academic atmosphere by attending lectures, symposia, and journal clubs. Please visit these LANL websites: <http://hiv.lanl.gov>, <http://hcv.lanl.gov>, and <http://www.flu.lanl.gov>.

Research Assistant **January 2005 – May 2006**
Dr. Santiago Schnell, in the School of Informatics at IU, supervised and funded my Capstone project, a web-based tool for analyzing enzyme kinetics data, using a unique and mathematically powerful new algorithm. Built this project from the ground up, starting with a clean linux PC. Installed Apache server software, wrote all of the HTML and CSS, javascript, Perl scripts and CGI, and some Fortran code, integrating these parts into a working website. Please visit the BioFitWeb site at <http://156.56.92.83/BioFitWeb.htm>, or mirrored at <http://biofitweb.cox-thurmond.net/BioFitWeb.shtml>.

Teacher **1990 – 2004**
I taught mathematics and science for 15 years, at a wide range of levels and to a great variety of students. My duties have included committee work, new curriculum development, research projects, and management of other teachers. Details of my teaching career are available upon request.

Laboratory Assistant **1989**
I worked in Dr. Ian Molineux's microbiology laboratory investigating host-phage interactions between *E. coli* and bacteriophage T7. My research included culturing and plating bacteria and phages, mutating and transfecting with genes of interest, purifying proteins, isolating and sequencing DNA, and analyzing data.

Publications: J. Thurmond, H. Yoon, C. Kuiken, K. Yusim, S. Perkins, J. Theiler, T. Bhattacharya, B. Korber, W. Fischer. *T-cell Vaccine Design and Epitope Coverage Tool Suite*. (submitted)

S. Schnell, J. Thurmond. *The condition for pseudo-first-order kinetics to be valid in receptor-ligand associations is derived using phase-plane analysis*. (submission pending)

C. Kuiken, P. Hraber, D. Aggarwal, V. Hamine, J. Thurmond. *A New Hepatitis C Sequence Database in Los Alamos*. Nucleic Acids Research Journal. (submitted)

P Hraber, R Leach, L Reilly, J Thurmond, K Yusim, C Kuiken, and the Los Alamos HIV Database Team. *Los Alamos hepatitis C virus sequence and human immunology databases: An expanding resource for antiviral research*. Antiviral Chemistry and Chemotherapy 18(3):113-124, 2007.

Skills: *Programming*
Fluent in perl, PHP, java, C++, and several other languages. Familiar with Windows, Unix, Linux, and Mac environments. Well-versed with many technical software packages such as Matlab, Systat, Excel, etc. Experience using version control software.

Web design
Skilled with HTML, javascript, PHP, and CSS. Experience installing and maintaining Apache and Tomcat web server software.

Inter-personal
Excellent communicator, verbally and in writing. Strong collaboration skills. I learn quickly and can teach well.

Projects: *Montessori Online Menu*
Web application tool package automating parent menu selection and school administration maintenance for a private school in Bloomington, IN. PHP with MySQL database access. Volunteer project.
<http://montessori.dreamhosters.com/index.php> (Menu tools are restricted access; ask for account)

BioFitWeb
Web application for enzyme kinetics data analysis. Integrates fortran code, perl CGI and Gnuplot scripts, javascript forms, and SQL querying capability administrated on a Linux Fedora system running Apache server software. Capstone project for bioinformatics masters degree.
<http://156.56.92.83/BioFitWeb.htm> or <http://biofitweb.cox-thurmond.net/BioFitWeb.shtml>

Sequence Alignment
Perl-CGI web tool for DNA or protein sequence alignment using the Smith-Waterman and Needleman-Wunsch dynamic programming algorithms with a unique weighted scoring system.

Java Application
Towers of Hanoi game implemented with a GUI, full animation of player moves, autoplay and play speed controls.

References:

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